islands along the coast from Newfoundland to Cape Cod, and on the mainland plentifully, in Gaspé, C. E.; also along the St. Lawrence." It also inhabits Greenland, but Vermont and Connecticut are mentioned with doubt. It is said to be common on the lower parts of Cape Cod and Cape Ann, and is very abundant on Salt Island, near Gloucester.

It thus having been adventive on our northeastern coast for at least somewhat over sixty or more, probably seventy-five, years (since it is mentioned by Mrs. Sheppard in the Transactions of the Literary and Historical Society of Quebec, I., p. 193, 1829), it is interesting to note the fact that a new variety has apparently evolved in this country, so different from any known to exist in the old world that Dr. Binney described it in 1837 as a new species under the name *Helix subglobosa*. "The specimens first discovered by Dr. Binney were all of the plain greenish-yellow variety; and, though he could not fail to perceive their affinity to the *H. hortensis*, he thought he discovered differences enough to entitle them to a specific distinction, and therefore described them under the name of *H. subglobosa*. But numerous specimens have since been brought from the same vicinity, bearing all the various zones of the European specimens."

Perhaps a new locality, or one not generally known, is a small, quite inaccessible islet in Casco Bay called 'the Brown Cow,' between Portland and Harpswell. We found them in abundance over ten or fifteen years ago, and again in the summer of 1895. As stated by Binney, we also found their habits entirely different from those of *H. albolabris* and *alternata*, in crawling up the stems and over the leaves of tall plants, so that they have retained unaltered this habit of their European ancestors. The greenish-yellow variety *subglobosa* greatly outnumber the banded variety. Like other introduced species, they are much more prolific and numerous in individuals than the native species.

The other omission is the farther history of the case of the introduction, briefly referred to by Mr. Kew, 'a few years ago,' of *Helix nemoralis* from Europe into Lexington, Va., which is given by Prof. T. D. A. Cockerell in *Nature* for February 27, 1890, when he remarks: "Under the new conditions it varied more than I have ever known it to do elsewhere, and up to the present date 125 varieties have been discovered there. *Of these, no less than sixty-seven are new, and unknown in Europe, the native country of the species!* The variation is in the direction of division of the bands.

The facts collected in this little volume by Mr. Kew would seem, then, to be a necessary preliminary to a study of the varieties set up in immigrant species, and this will throw much light on the general question of the origin of species, the primary factors in the evolution of such forms being migration, exposure to new climatic conditions, and geographical isolation. These would seem to be sufficiently efficient and apparent causes of variation, without calling in, in such cases, the aid of natural selection.

A. S. Packard.

Laboratory Manual of Inorganic Preparations, by H. T. Vulté, Ph. D., F. C. S., Professor of Chemistry in Barnard College and assistant in Chemistry at the School of Mines, Columbia College, N. Y., and George M. S. Neustadt. New York, G. G. Peck. 1895.

There can be no doubt that a carefully prepared manual of Inorganic Preparation is desirable. This book is not carefully prepared. The authors in their preface state that this book is compiled from the works of Erdmann and Fresenius and from various chemical journals. The articles translated from Erdmann are good, for Erdmann tested the methods before recommending them. Through a careless blunder in the translations of Erdmann's instructions for making iodine pentoxide from iodine and nitric acid, the student is told to use '158 c. c. of water and nitric acid.' Erdmann says 'anhydrous nitric acid.' Every chemist knows that unless the nitric acid is anhydrous, it does not yield iodine pentoxide.

On page 123 the author states that in distilling nitric acid at 121° an acid of the composition $2HNO_3+H_2O$ distills over. Of course, the acid HNO_3+2H_2O is meant. The abstracts of some of the articles from chemical journals are very carelessly written. On page 129 is an abstract entitled 'Pure Phosphoric Acid from Sodium Phosphite.' ('Phosphate,' of course,

is meant, as two pages further on an abstract on Calcium Phosphide is printed 'Phosphite,' but these are mere printer's errors; the book is full of such.) In the directions no reference is made to a filtration or other mode of separation of phosphoric acid formed from the by-product. The same criticism applies to the next method, 'Phosphoric acid from calcium phosphate,' though both the original articles mention the modes of separation, and careful attention to details is necessary in a laboratory manual.

On page 174 is an abstract of an article by E. J. Maumené, entitled 'Chydrazaïne or Protoxide of Ammonia.' The attention of the present writer was attracted by the statement at the end of the abstract, that 'on evaporating Chydrazaïne nitrate, nitric acid, nitrogen peroxide, nitrogen and a compound having the composition N_2H_2 are evolved.'

Suprised at finding the long-sought-for diimide as a by-product in a preparation for college students, the original article was consulted. Maumené is responsible for diimide and chydrazäine, and this is not the place to offer any further criticism of his work than to call the attention of the authors to the fact that the existence of chydrazäine has not been confirmed. Maumené uses a solution of potassium permanganate and sulphuric acid. He says, 'je les versais doucement dans une dissolution faite à l'avance de 111 grammes ammonium oxalate róel, cést a dire $111 \times \frac{78.86}{62} = 141.2$ sel cristallisé bien sec; le mélange était fait avec soin dans mon mélangeur; nécessaire en pareil cas.' The authors abstract this in these words. "A solution of potassium per maganate (158 grams) and sulphuric acid (40 grams SO_3) is added to dried crystallized ammonium oxalate (141.2 grams), the whole well mixed." Comment is unnecessary.

If this review be deemed harsh, the writer pleads that no one should publish a laboratory manual of preparations without knowing that the preparation of all substances described is not too difficult for students, and that the directions given are good and clear. By careful revision and excision, the authors can make their manual very valuable, as it contains an abundance of excellent matter.

E. RENOUF.

A Handbook of Industrial Organic Chemistry. By SAMUEL P. SADTLER, PH. D., F. C. S. 2d Edition, revised and enlarged. Philadelphia, J. B. Lippincott Co. 1895. 8vo., pp. 537.

That a second edition of this work should be called for within four years after the first appeared is evidence that the book has met general approval and satisfies the requirements it was intended to fill. The dearth of works of this class in the English language has been felt by instructors of technical chemistry for a long time, and consequently this volume, enlarged and improved and brought up to date, will be received with pleasure by every teacher of the subject. The chemical manufacturer and general reader will also find this an excellent work, neither too brief in its treatment of the several subjects, nor too abstruse in dealing with the minor details of processes or apparatus, and happily within the reach of modest pocket books.

There is no change in the manner or order of treatment of the various industries from that adopted in the first edition, but numerous additions and corrections have been made in the text. The bibliographical lists at the close of the several chapters have been entirely revised, added to and brought up to the present time. This feature of the book is one of its most valuable points, since it places at the disposal of the reader a very complete list of works on any of these industries, should he desire more detailed accounts of processes or apparatus, thus saving him hours of laborious search through library or publishers' catalogues.

The numerous tables of statistics have been corrected and increased with the latest data obtainable and add much to the value of the book. In the appendix new tables showing the chemical and physical constants of oils, fats and waxes have been added.

The schematic tables of the various processes, scattered through the book are a great assistance to the reader, by showing at a glance the connections between different parts of the processes and also aiding to refresh the memory in reviewing the work.

The subjects treated are briefly: Petroleum and Mineral Oils, Fats and Fatty Oils, Essential Oils, Resins, Cane Sugar Industry, Starch and